Publications – Todd Colin Pataky

Publication metrics	Peer-reviewed journal articles:	65
	Total citations:	1,553
	h-index:	26
	i-10 index:	37

Publications (invited)

1. **Pataky TC** (2012). Plantar pressure distribution analysis and applications [in Japanese]. Seitai Ohyoh Keisoku [Journal of Applied Bio-metrology] 3: 1–10.
2. Crompton RH, **Pataky TC** (2009). Stepping out. *Science* 323: 1174:1175.

Publications (peer reviewed)

1. **Pataky TC**, Robinson MA, Vanrenterghem J (2017). A computational framework for estimating statistical power and planning hypothesis-driven experiments involving one-dimensional biomechanical continua. Journal of Biomechanics, in press.
2. **Pataky TC**, Lamb PF (2017). Effects of physical randomness training on virtual and laboratory golf putting performance in novices. Journal of Sports Science, in press.
3. Breine B, Malcolm P, Segers V, Gerlo J, Derie R, **Pataky TC**, Frederick EC, De Clercq D. (2017). Magnitude and spatiall distribution of impact intensity under the foot relates to initial foot contact pattern. Journal of Applied Biomechanics, in press.
4. Sole G, **Pataky TC**, Sole CC, Hale L, Milosavljevic S (2017). Age-related plantar centre of pressure trajectory changes during barefoot walking. Gait & Posture 57: 188-192.
5. **Pataky TC** (2017). power1d: Numerical Power Estimates for One-Dimensional Continuum Datasets in Python. PeerJ Computer Science, 3:e125. 10.7717/peerj-cs.125
6. Donnelly CJ, Alexander C, **Pataky TC**, Stannage K, Reid S, Robinson MA (2017). Vector-field statistics for the analysis of time varying clinical gait data. Clinical Biomechanics 41: 87-91. 10.1016/j.clinbiomech.2016.11.008 [JIF 1.64, FOR Rank: Q2 (40/132)].
7. Sole G, **Pataky TC**, Tengman E, Hager CK (2017). Analysis of three-dimensional knee kinematics during stair descent two decades post-ACL rupture - data revisited using Statistical Parametric Mapping. Journal of Electromyography and Kinesiology 32: 44-50. 10.1016/j.jelekin.2016.12.005
8. **Pataky TC**, Koseki M, Cox PG (2016). Probabilistic biomechanical finite element simulations: whole-model classical hypothesis testing based on upcrossing geometry. PeerJ Computer Science 2: e96, https://doi.org/10.7717/peerj-cs.96.
9. **Pataky TC**, Vanrenterghem J, Robinson MA (2016). Region-of-interest analyses of one-dimensional biomechanical trajectories: bridging 0D and 1D methods, augmenting statistical power. PeerJ 4: e2652, https://doi.org/10.7717/peerj.2652.
10. McClymont J, **Pataky TC**, Crompton RH, Savage R, Bates KT (2016) The nature of functional variability in plantar pressure during a range of controlled walking speeds. Royal Society Open Science 3(8) 160369.
11. Malfait B, Dingenen B, Staes F, **Pataky TC**, Robinson M, Vanrenterghem J, Verschueren S (2016) Knee and hip joint kinematics predict quadriceps and hamstrings neuromuscular activation patterns in drop jump landings. PLOS ONE 11(4) e0153737.
12. **Pataky TC**, Vanrenterghem J, Robinson MA (2016). The probability of false positives in zero-dimensional analyses of one-dimensional kinematic, force and EMG trajectories. Journal of Biomechanics 49(9): 1468–1476. 10.1016/j.jbiomech.2016.03.032
13. Nieuwenhuys A, Papageorgiou E, **Pataky TC**, De Laet T, Molenaers G, Desloovere K (2016). Literature review and comparison of two statistical methods to evaluate the effect of botulinum toxin treatment on gait in children with cerebral palsy. PLOS One 11(3): e0152697.

14. Panagiotopoulou O, Spyridis P, Abraha HM, Carrier DR, **Pataky TC** (2016). Architecture of the sperm whale forehead facilitates ramming combat, PeerJ 4:e1895.
15. **Pataky TC** (2016). RFT1D: smooth one-dimensional random field upcrossing probabilities in Python. Journal of Statistical Software, 71 (7): i07; 10.18637/jss.v071.i07.
16. de Castro MP, **Pataky TC**, Sole G, Vilas-Boas JP (2015). Pooling genders when assessing ground reaction forces during walking: statistical parametric mapping versus traditional approach. J Biomech 48(10): 2162-2165.
17. **Pataky TC**, Vanrenterghem J, Robinson MA (2015). Zero- vs. one-dimensional, parametric vs. non-parametric, and confidence interval vs. hypothesis testing procedures in one-dimensional biomechanical trajectory analysis. Journal of Biomechanics 48(7): 1277–1285. ***Featured as an Issues Highlight at www.jbiomech.com**.
18. Robinson MA, Vanrenterghem J, **Pataky TC** (2015). Statistical Parametric Mapping (SPM) for alpha-based statistical analyses of multi-muscle EMG time-series. Journal of Electromyography and Kinesiology 25(1): 14–19.
19. **Pataky TC** (2015). Correlation between maximum in-shoe plantar pressures and clubhead speed in amateur golfers. Journal of Sports Sciences 33(2): 192–197.
20. **Pataky TC**, Robinson MA, Vanrenterghem J (2015). Two-way ANOVA for scalar trajectories, with experimental evidence of nonphasic interactions. Journal of Biomechanics 48(1): 186-189.
21. **Pataky TC**, Robinson MA, Vanrenterghem J, Savage R, Bates KT, Crompton RH (2014). Vector field statistics for objective center-of-pressure trajectory analysis during gait, with evidence of scalar sensitivity to small coordinate system rotations. Gait and Posture 40(1): 255-258.
22. Phethean J, **Pataky TC***, Nester CJ, Findlow AH (2014). A cross-sectional study of age-related changes in plantar pressure distribution between 4-7 years: a comparison of regional and pixel-level analyses. Gait and Posture 39(1): 154–160. *Corresponding author.
23. **Pataky TC**, Savage R, Bates KT, Sellers WI, Crompton RH (2013). Short-term step-to-step correlation in plantar pressure distributions during treadmill walking, and implications for trackway analysis. Gait & Posture 38(4): 1054-1057.
24. De Ridder R, Willems T, Vanrenterghem J, Robinson MA, **Pataky TC**, Roosen P (2013). Gait kinematics of subjects with ankle instability using a multisegmented foot model. Medicine & Science in Sports & Exercise 45(11): 2129-2136.
25. **Pataky TC**, Slota GP, Latash ML, Zatsiorsky VM (2013). Is power grasping contact continuous or discrete? Journal of Applied Biomechanics 29(5):554-62.
26. **Pataky TC**, Robinson MA, Vanrenterghem J (2013). Vector field statistical analysis of kinematic and force trajectories. Journal of Biomechanics 46(14): 2394-2401.
27. Bates KT, Collins D, Savage R, Webster E, **Pataky TC**, McClymont J, D'Aout K, Sellers WI, Bennett MR, Compton RH (2013). The evolution of compliance in the human lateral mid-foot. Proceedings of the Royal Society B - Biological Sciences 280: 20131818.
28. Bates KT, Savage R, **Pataky TC**, Morse SA, Webster E, Falkingham PL, Ren L, Collins D, Bennett MR, McClymont J, Crompton RH (2013). Does footprint depth correlate with foot motion and pressure? Journal of the Royal Society Interface 10(83): 2013.0009.
29. Vanrenterghem J, Venables E, **Pataky TC**, Robinson MA (2012). The effect of running speed on knee mechanical loading in females during side cutting. Journal of Biomechanics 45(14): 2444-2449.
30. **Pataky TC** (2012). Spatial resolution in plantar pressure measurement revisited. Journal of Biomechanics 45(12): 2116-2124.
31. Giacomozzi C, Keijsers N, **Pataky TC**, Rosenbaum D (2012). International scientific consensus on medical plantar pressure measurement devices: technical requirements and performance. Annali dell'Istituto Superiore di Sanità 48(3): 259-271.
32. Cox PG, Rayfield EJ, Fagan MJ, **Pataky TC**, Jeffery N (2012). Functional evolution of the feeding system in rodents. PLoS One 7(4): e36299.

33. Panagiotopoulou O, **Pataky TC**, Hill Z, Hutchinson JR (2012). Statistical parametric mapping of the regional distribution and ontogenetic scaling of foot pressures during walking in Asian elephants (Elephas maximus). Journal of Experimental Biology 215(9): 1584-1593.
34. **Pataky TC**, Mu T, Bosch K, Rosenbaum D, Goulermas JY (2012). Gait recognition: highly unique plantar pressure patterns amongst 104 individuals. Journal of the Royal Society Interface. 9(69): 790-800.
35. Crompton RH, **Pataky TC**, Savage R, D'Août K, Bennett M, Day M, Bates K, Morse S, Sellers WI (2012). Human-like external function of the foot, and fully upright gait, confirmed in the 3.66 million year old Laetoli hominin footprints by topographic statistics, experimental footprint-formation and computer simulation. Journal of the Royal Society Interface. 9(69): 707-719.
36. **Pataky TC** (2012). One-dimensional statistical parametric mapping in Python. Computer Methods in Biomechanics and Biomedical Engineering 15(3): 295-301.
37. **Pataky TC**, Slota GP, Latash ML, Zatsiorsky VM (2012). Radial force distribution changes associated with tangential force production in cylindrical grasping, and the importance of anatomical registration. Journal of Biomechanics 45(2): 218-224.
38. **Pataky TC**, Maiwald C (2011). Spatiotemporal volumetric analysis of dynamic plantar pressure data. Medicine & Science in Sports & Exercise. 43(8): 1582-1589.
39. **Pataky TC**, Bosch K, Mu T, Keijsers NLW, Segers V, Rosenbaum D, Goulermas JY (2011). An anatomically unbiased foot template for inter-subject plantar pressure evaluation. Gait & Posture 33(3): 418-422.
40. Oliveira FPM, **Pataky TC**, Tavares JMRS (2010). Registration of pedobarographic image data in the frequency domain. Computer Methods in Biomechanics and Biomedical Engineering 13(6): 731-740.
41. Caravaggi P, **Pataky TC**, Gunther M, Savage R, Crompton R (2010). Dynamics of longitudinal arch support in relation to walking speed: contribution of the plantar aponeurosis. Journal of Anatomy 217(3): 254-261.
42. **Pataky TC** (2010). Generalized n-dimensional biomechanical field analysis using statistical parametric mapping. Journal of Biomechanics 43(10): 1976-1982.
43. Sellers WI, **Pataky TC**, Caravaggi P, Crompton RH (2010). Evolutionary robotic approaches in primate gait analysis. International Journal of Primatology 31(2): 321-338.
44. Mu T, **Pataky TC**, Findlow AH, Goulermas JY (2010). Automated nonlinear feature generation and classification of foot pressure lesions. IEEE Transactions on Information Technology in BioMedicine 14(2): 418-424.
45. Keijsers NLW, Stolwijk NM, **Pataky TC** (2010). Linear dependence of peak, mean, and pressure-time integral values in plantar pressure images. Gait and Posture 31(1): 140-142.
46. D'Août K, **Pataky TC**, De Clercq D, Aerts P (2009). The effects of habitual footwear use: foot shape and function in native barefoot walkers. Footwear Science 1(2): 81-94.
47. Oliveira FPM, Tavares JMRS, **Pataky TC** (2009). Rapid pedobarographic image registration based on contour curvature and optimization. Journal of Biomechanics 42(15): 2620-2623.
48. Caravaggi P, **Pataky TC**, Goulermas JY, Savage R, Crompton R (2009). An anatomically based inverse dynamic model of the windlass mechanism of the foot: evidence for early stance phase preloading of the plantar aponeurosis. Journal of Experimental Biology 212: 2491-2499.
49. **Pataky TC**, Keijsers NLW, Goulermas JY, Crompton RH (2009). Nonlinear spatial warping for between-subjects pedobarographic image registration. Gait and Posture 29(3): 477-482.
50. **Pataky TC**, Goulermas JY, Crompton RH (2008). A comparison of seven methods of within-subjects rigid body pedobarographic image registration. Journal of Biomechanics 41(14): 3085-3089.
51. **Pataky TC**, Caravaggi P, Savage R, Crompton RH (2008). Regional peak plantar pressures are highly sensitive to regional boundary definitions. Journal of Biomechanics 41(12): 2772-2775.
52. **Pataky TC** (2008). Assessing the significance of pedobarographic signals using random field theory. Journal of Biomechanics 41(11): 2465-2473.

53. **Pataky TC**, Goulermas JY (2008). Pedobarographic statistical parametric mapping: a pixel-level approach to foot pressure image analysis. Journal of Biomechanics 41(10): 2136-2143.

54. **Pataky TC**, Caravaggi P, Savage R, Parker D, Goulermas JY, Sellers WI, Crompton RH (2008). New insights into the plantar pressure correlates of walking speed using pedobarographic statistical parametric mapping (pSPM). Journal of Biomechanics 41(9): 1987-1994.

55. **Pataky TC**, Latash ML, Zatsiorsky VM (2008). Multi-finger ab-/adduction strength and coordination. Journal of Hand Therapy 21(4): 377-385.

56. **Pataky TC**, Savescu AV, Latash ML, Zatsiorsky VM (2007). A device for testing the intrinsic muscles of the hand. Journal of Hand Therapy 20(4): 345-350.

57. **Pataky TC**, Latash ML, Zatsiorsky VM (2007). Finger interaction during maximal radial and ulnar deviation efforts: experimental data and linear neural network modeling. Experimental Brain Research 179(2):301-312.

58. **Pataky TC** (2005). Soft tissue strain energy minimization: a candidate control scheme for intra-finger normal-tangential force coordination. Journal of Biomechanics 38(8): 1723-1727.

59. **Pataky TC**, Latash ML, Zatsiorsky VM (2005). Viscoelastic response of the finger pad to incremental tangential displacements. Journal of Biomechanics 38(7): 1441-1449.

60. Jordan K, **Pataky TC**, Newell K (2005). Grip width and the organization of force output. Journal of Motor Behavior 37(4): 285-294.

61. **Pataky TC**, Latash ML, Zatsiorsky VM (2004). Prehension synergies during nonvertical grasping. II. Modeling and optimization. Biological Cybernetics 91(4): 231-242.

62. **Pataky TC**, Latash ML, Zatsiorsky VM (2004). Prehension synergies during nonvertical grasping. I. Experimental observations. Biological Cybernetics 91(3): 148-158.

63. **Pataky TC**, Latash ML, Zatsiorsky VM (2004). Tangential load sharing among fingers during prehension. Ergonomics 47(8): 876-889.

64. **Pataky TC**, Zatsiorsky VM, Challis JC (2003). A simple method to determine body segment masses in vivo: reliability, accuracy, and sensitivity analysis. Clinical Biomechanics 18: 364-368.

65. Sternad D, DeRugy A, **Pataky TC**, Dean WJ (2002). Interaction of discrete and rhythmic movements over a wide range of periods. Experimental Brain Research 147(2): 162-174.